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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/712,505

11/14/2000

Kevin R. Driscoll

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06/05/2006

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EXAMINER

JACKSON, JENISE E

ART UNIT

PAPER NUMBER

2131

DATE MAILED: 06/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/712,505

Applicant(s)

DRISCOLL, KEVIN R.

Examiner

Jenise E. Jackson

Art Unit

2131

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13, 16-22, 24, 26-35, 37 and 39-43 is/are rejected.
- 7) ☒ Claim(s) 14-15, 23, 25, 36, 38 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

2. The term "substantially similar" in claim 1 is a relative term, which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. In the specification on page 7, it discloses the receiver includes pseudo-random number generator and a decryption combiner. Pseudo-random number generator receives private key which is the same private key of the of the pseudo-random number generator as that of the encryption combiner. Than the Applicant states that the decryption combiner is disclosed as having a binary data sequence that substantially matches plaintext. The Examiner asserts that this term "substantially" is indefinite and vague. If the encryption key is not the same result as the decryption key, how does one know whether the key is secure or if the right key was transmitted? Therefore, because claim 1 is rejected under 112 2<sup>nd</sup>, Claims 2-8 are rejected under 112 2<sup>nd</sup>.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

4. Claims 1-4, 7-13, 16-22, 24, 26-35, 37, 39-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Coppersmith et al(6,185,679).

5. As per claims 1, 9-11, 18, Coppersmith et al. discloses a source for providing an encryption keystream(see col. 10, lines 33-67)an encryption combiner receiving a first plaintext binary data sequence(see col. 11, lines 45-55) and the encryption keystream and performing a first set of two non-associative operations on the first plaintext binary data sequence(see col. 16, lines 7-41) and the encryption keystream to provide a ciphertext binary data sequence(see col. 7, lines 7-41); a source for providing a decryption keystream; and a decryption combiner receiving the ciphertext binary data sequence and the decryption keystream(see fig. 3, sheet 3) and performing a second set of two non-associative operations on the ciphertext binary data sequence and the decryption keystream to provide a second plaintext binary data sequence that is the same as the first plaintext binary data sequence(see col. 18, lines 65-67, col. 19, lines 1-22).

6. As per claim 2, Coppersmith discloses the stream cipher cryptosystem wherein each operation in the second set is the inverse of an operation in the first set( col. 18, lines 65-67, 65-67, col. 20, lines 1-20).

7. As per claim 3, Coppersmith discloses the stream cipher cryptosystem wherein the operations in the first set include an integer addition operation and an XOR operation, and the operations in the second set include an integer subtraction operation and an XOR operation(see col. 16, lines 7-41, col. 18, lines 65-67, col. 19, lines 65-67, col. 20, lines 1-20, figure 3, sheet 3).

8. As per claim 4, Coppersmith discloses the stream cipher cryptosystem wherein the operations in the first set include an integer subtraction operation and an XOR operation, and the

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operations in the second set include an integer addition operation and an XOR operation(see col. 16, lines 7-41, col. 18, lines 65-67).

9. As per claim 7, Coppersmith discloses the stream cipher cryptosystem, wherein the operations in the first set include a rotate right operation and an XOR operation, and the operations in the second set include a rotate left operation and an XOR operation(see fig. 6A and 6B, sheet 6 and 8, col. 17, lines 1-67, col. 18, lines 12-49).

10. As per claim 8, Coppersmith discloses the stream cipher cryptosystem wherein the operations in the first set include a rotate left operation and an XOR operation, and the operations in the second set include a rotate right operation and an XOR operation(see fig. 6A and 6B, sheet 6 and 8, col. 17, lines 1-67, col. 18, lines 12-49).

11. As per claim 12, Coppersmith discloses stream cipher cryptosystem wherein the two sequential non-associative operations are an integer addition operation and an XOR operation(col. 16, lines 7-41, col. 18, lines 65-67, col. 19, lines 65-67, col. 20, lines 1-20, figure 3, sheet 3).

12. As per claim 13, Coppersmith discloses the stream cipher cryptosystem wherein the two sequential non-associative operations are an integer subtraction operation and an XOR operation (see col. 16, lines 7-41, col. 18, lines 65-67).

13. As per claim 16, Coppersmith discloses the stream cipher cryptosystem of wherein the two sequential non-associative operations are a rotate; right operation and an XOR operation(see fig. 6A and 6B, sheet 6 and 8, col. 10, lines 15-16, col. 17, lines 1-67, col. 18, lines 12-49).

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14. As per claims 17, 29, Coppersmith discloses the stream cipher cryptosystem of wherein the two sequential non-associative operations are a rotate left operation and an XOR operation(see fig. 6A and 6B, sheet 6 and 8, col. 17, lines 1-67, col. 18, lines 12-49).

15. As per claims 19, 32, Coppersmith discloses wherein the two non-associative operations include an integer addition operation(see col. 16, lines 7-41, col. 18, lines 65-67, figure 3, sheet 3).

16. As per claim 20, Coppersmith discloses the wherein the two non-associative operations include an XOR operation(see col. 16, lines 7-41, col. 18, lines 65-67, col. 19, lines 65-67, col. 20, lines 1-20, figure 3, sheet 3).

17. As per claim 21, Coppersmith discloses wherein the two non-associative operations include an integer subtraction operation(see col. 16, lines 7-41, col. 18, lines 65-67).

18. As per claims 22, 24, 26, Coppersmith discloses wherein the two non-associative operations include an XOR operation(see col. 16, lines 7-41, col. 18, lines 65-67, figure 3, sheet 3).

19. As per claim 27, Coppersmith discloses wherein the two non-associative operations include a rotate right operation(see col. 10, lines 15-16).

20. As per claims 28, 30, limitations already addressed(see claim 24).

21. As per claim 31, limitations have already been addressed(see claim 1).

22. As per claim 32, wherein the two non-associative operations include an integer addition operation(see col. 8, lines 30-65).

23. As per claim 33, already rejected(see claim 24).

24. As per claim 34, already rejected(see claim 21).

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- 25. As per claims 35, 37, 39, limitations already rejected(see claim 24).
- 26. As per claims 39, 43, limitations already rejected(see claim 24).
- 27. As per claim 40, limitations already rejected(see claim 27).
- 28. As per claims 41, 43, limitations already rejected(see claim 24).
- 29. As per claim 42, limitations already rejected(see claim 7).
- 30. As per claims 14-15, 23, 25, 36 and 38 are objected to as being rejected on base claims.

Reasons why these claims are allowable are for the features of inverse modular multiplication and modular multiplication being applied to the same keystream, along with XOR. In symmetric encryption there is no disclosure of using both modular multiplication in combination with another operation.

#### **Response to Applicant**

- 31. Applicant's arguments were persuasive. Thus, new art has been applied to the claims.

#### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenise E. Jackson whose telephone number is (571) 272-3791. The examiner can normally be reached on M-Th (6:00 a.m. - 3:30 p.m.) alternate Friday's.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Shiekh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



May 24, 2006



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